ABSTRACT

CREATIVE PROJECT: Developing a User-friendly Bicycle Network in Fast-growing Cities in China: Taking Zhongguancun Avenue in Beijing as an Example

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This creative project redesigns Zhongguancun Avenue in Beijing as an example to explore strategies to develop user-friendly bicycle networks in China. Bicycles were once the primary mode of transport in urban areas in China. As cities have expanded and motor vehicles developed over time, this mode has been challenged by the diminished cycling space, deteriorated cycling environment, and outdated facilities. Cyclists risk safety when sharing and competing for space with motor vehicles. Setting the goal for designing a better urban cycling environment under this context, the project explores developing a safe and efficient transport environment for Zhongguancun Avenue in Beijing for bicycle commuting while providing a comfortable environment for recreational use for cyclists and pedestrians.

This project reviews existing literatures to identify solutions for establishing and improving bicycle networks, including bicycle path and bicycle lane design, conflict resolution, bicycle parking and storage design, and green bicycle network development.

Then, the project presents basic information of the project site and analyzes problems and conflicts of the existing conditions, including conflicts along bike lanes, conflicts at intersections, and bicycle storage conditions. In the design section, this project offers possible design solutions by improving bicycle lanes, developing safer intersections, and adding efficient storage facilities. At the same time, potential green nodes were connected with landscape design strategies into a coherent whole cycling environment, which increases comfort and aesthetics.

The redesign of Zhongguancun Avenue serves as a useful example to investigate design solutions for developing a bicycle network in Beijing. These solutions can be applied to other streets in the urban areas in Beijing. Some solutions provided by the project successfully meet the study objectives. However, some alternatives have constraints due to limited space or high construction cost.

The project also indicates that further studies for improving cycling environment are needed, especially the study for the conflict between motor vehicle parking and bicycles.